

The Princess Playhouse

by [alink](#) on January 3, 2009

Table of Contents

License: Attribution Non-commercial Share Alike (by-nc-sa)	2
Intro: The Princess Playhouse	2
step 1: Plans and Framing	8
step 2: Roofing	10
step 3: Electrical and Audio/Video Wiring	11
step 4: The Magic Mirror	14
step 5: TV and Sound System	17
step 6: Insulation and Drywall	19
step 7: Lighting, Windows, and Door	21
step 8: Floor, Picture Rail Molding, and Baseboard	24
step 9: Built-in Bookshelf	27
Related Instructables	29
Advertisements	30
Comments	30

License: Attribution Non-commercial Share Alike (by-nc-sa) 

Intro: The Princess Playhouse

A Princess Playhouse for my two girls.

It features:

- An Interactive Magic Mirror ([See Separate DIY Magic Mirror Instructable](#))
- Vintage Light Fixtures
- Stained Glass Windows
- A Built-in Bookshelf
- Recessed TV
- Sound System
- In-Ceiling Speakers
- Network
- Phone
- Faux Fireplace
- Doorbell
- Picture Rail Molding
- Ceiling Vent
- Gutters
- Laminate Flooring & Baseboard

I should also add that I'm an electronics tinkerer/computer geek, this was my first construction project. I had great help from my Dad and lots of good advice from friends and the Internet. It took me 8 months. So if I can do it, so can you with the right help.

Yes I know, it's a little over the top, but if you're going to spoil your girls you might as well do it right :-)



- Image Notes**
1. Built-in Bookcase
 2. Picture Rail Molding
 3. Laminate Floor
 4. Future Wall Phone



Image Notes

1. Vintage Sconce
2. This table is a salesman's sample. In the old days, salesmen would bring miniature versions of their full sized models to show people in their homes. My wife picked it up at an antique show.
3. Custom stained glass window

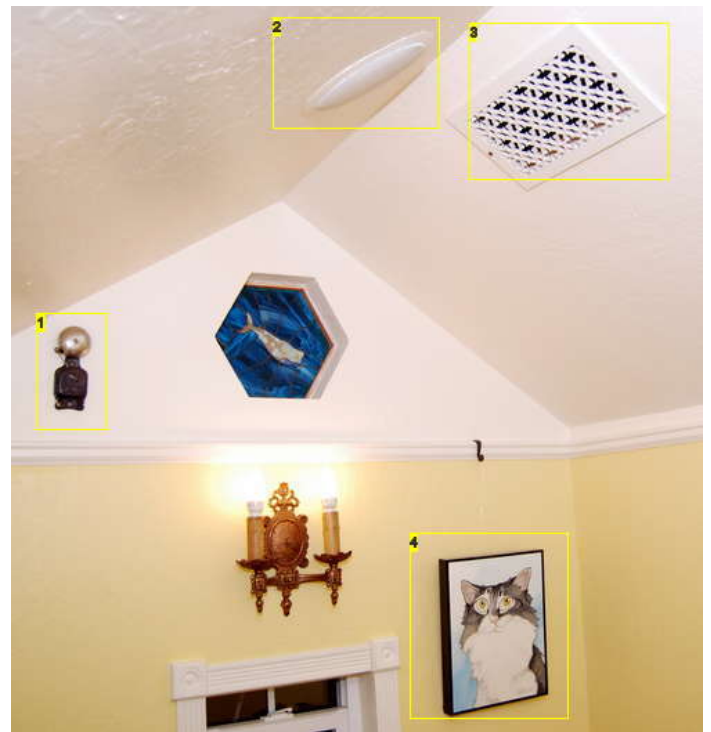


Image Notes

1. Vintage Doorbell
2. In-Ceiling Speakers
3. Vent
4. Our Cat



Image Notes
1. Wood Baseboard



Image Notes
1. Magic Mirror: <http://diymagicmirror.com>
2. Faux fireplace
3. Fake Fire (via Flickering Red LEDs)



Image Notes
1. A video will trigger on the Magic Mirror when this is picked up
2. Reed switch



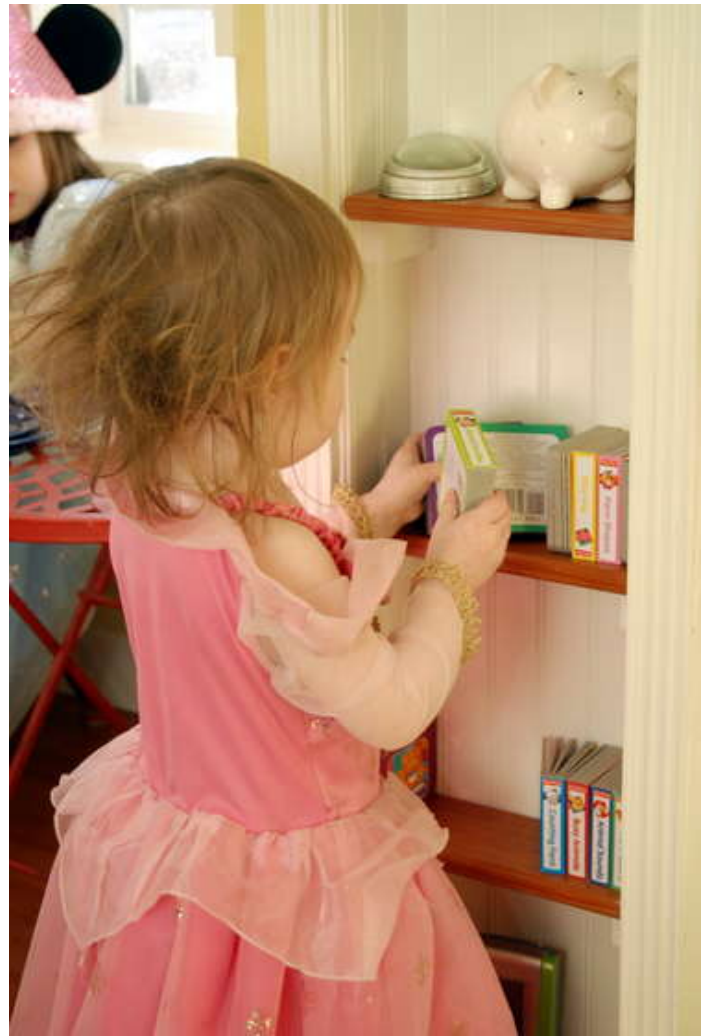


Image Notes

1. Recessed TV
2. Custom Stained Glass Window



Image Notes
1. In-ceiling speakers



Image Notes
1. Vintage door knob and working mortise lock



Image Notes
1. Tivo delivered via whole house video distribution system



Image Notes

1. Used this guy extensively, only \$80 at Sears and very small to store

step 1: Plans and Framing

After some Googling for playhouse plans, this one fit the bill, <http://www.woodmanor.net/Little-miss-playhouse-plans.html>. The dimensions are 8x8x8 feet.

My Dad framed it in Oregon, took it apart, and then drove it down to my place in California where we assembled it together.





Image Notes
1. Dad and my oldest



Image Notes
1. 8x8 concrete slab



step 2: Roofing

Next up was the roof. Roofing pretty much sucks. I'd probably pay someone if I had to do it again.

After the roof was on, the playhouse became really hot inside. I added a roof vent to let the hot air out which cooled things down nicely.



step 3: Electrical and Audio/Video Wiring

The electrical was fun although digging the trench was a back breaker. The playhouse has two AC circuits and a breaker panel attached to the back.

I also pulled in structured wiring combo cable (one cable sheath with 2 CAT 5e, 2 COAX, and 2 Fibers), speaker wire, and a whole lot of wires (using thermostat wire) for the sensors for the Magic Mirror .



Image Notes
 1. Coax for the TV
 2. Speaker wire



Image Notes
 1. X-10 Light Dimmers



Image Notes
 1. Porch light
 2. 12V Wiring for Doorbell

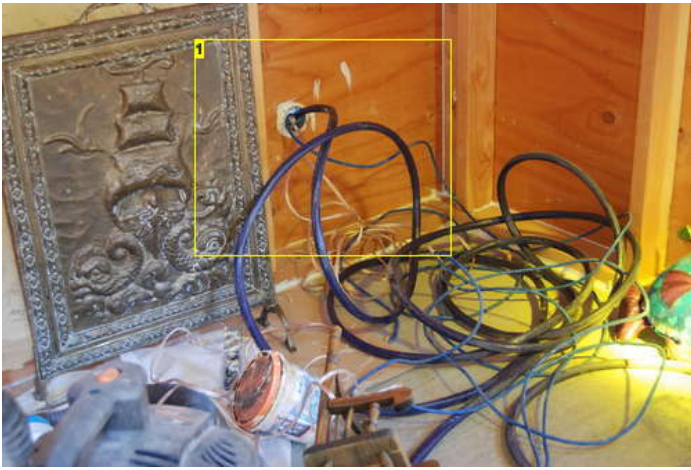


Image Notes

1. Combo cable and speaker coming into the Playhouse

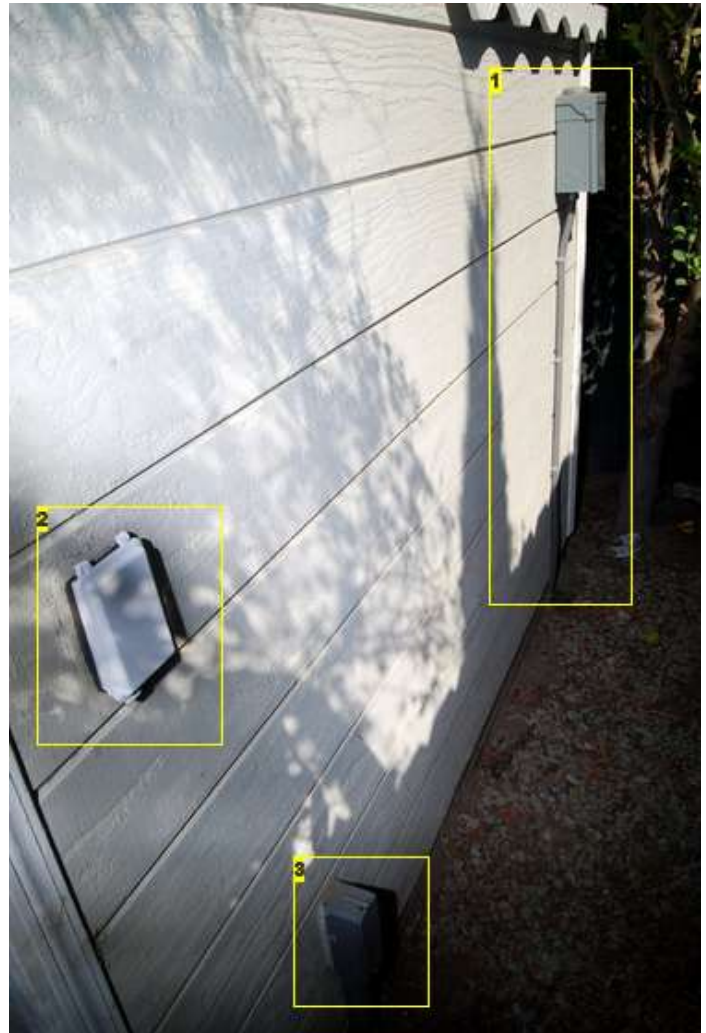


Image Notes

1. Electrical Panel
2. External Power
3. Combo Cable and Speaker Wire

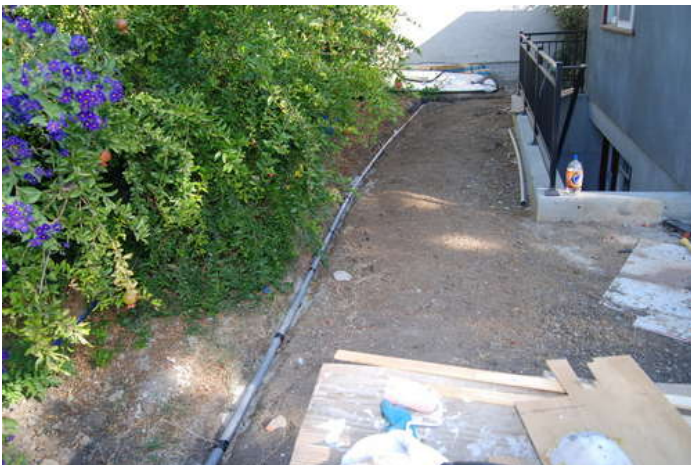




Image Notes

1. Combo Cable and Speaker Wire

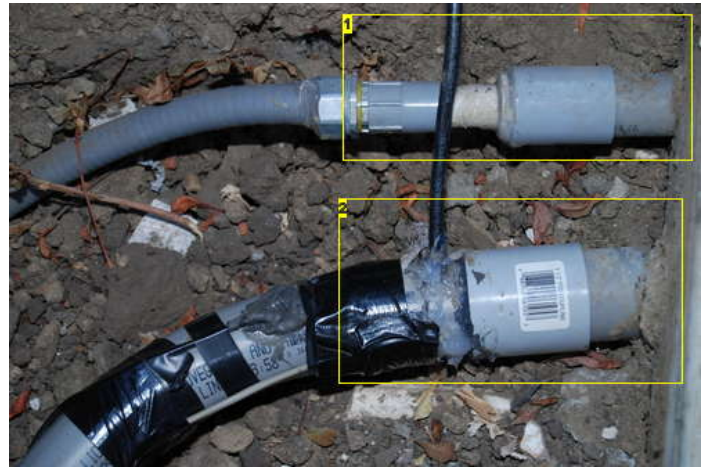


Image Notes

1. 120 VAC going into the main house panel
2. Combo Cable and Speaker Wire coming into the main house

step 4: The Magic Mirror

The Magic Mirror is the center piece of the playhouse. Its interactive and responds to various sensors (proximity, touch, and reed switches) that are embedded within the playhouse.

The full Instructable on the Magic Mirror is [here](http://www.instructables.com/id/The_Princess_Playhouse/) . I also recently finished a software product version of the Magic Mirror at <http://diymagicmirror.com>



Image Notes

1. A video will trigger on the Magic Mirror when this is picked up
2. Reed switch



Image Notes

1. Reed switch (a switch that goes off when close to a magnet). They are commonly used in window and door alarm systems.
2. Magnet inserted in bottom



Image Notes

1. Proximity Sensor (Magic Mirror goes off when the kids stand between a lower and upper distance range)

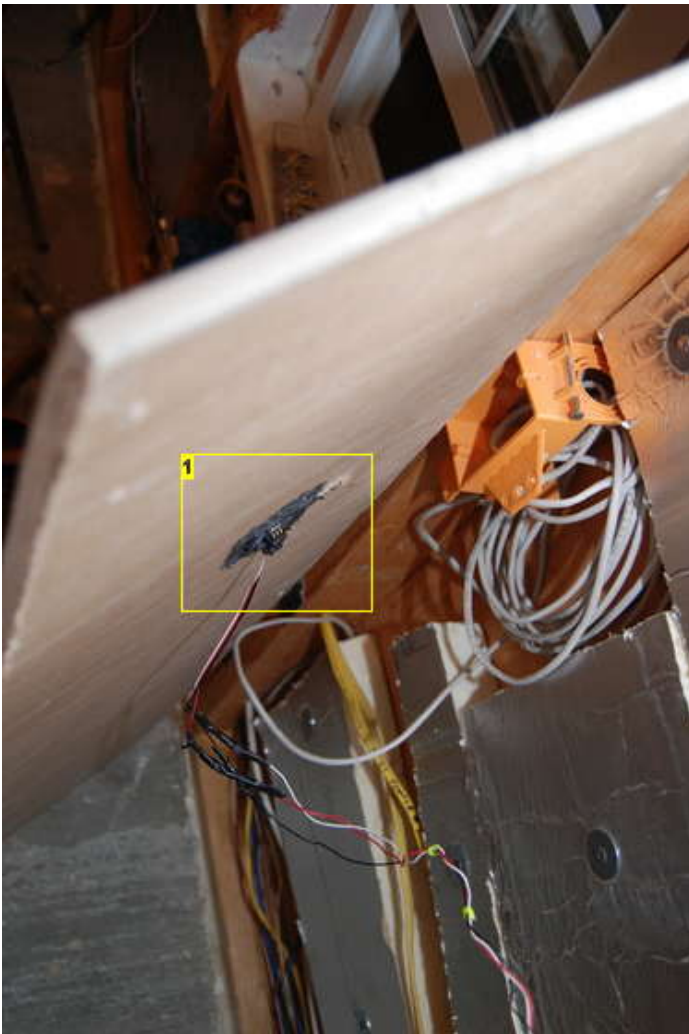


Image Notes

1. Touch sensor mounted behind the drywall



Image Notes

1. PC that powers the Magic Mirror (low power using Intel ATOM motherboard)

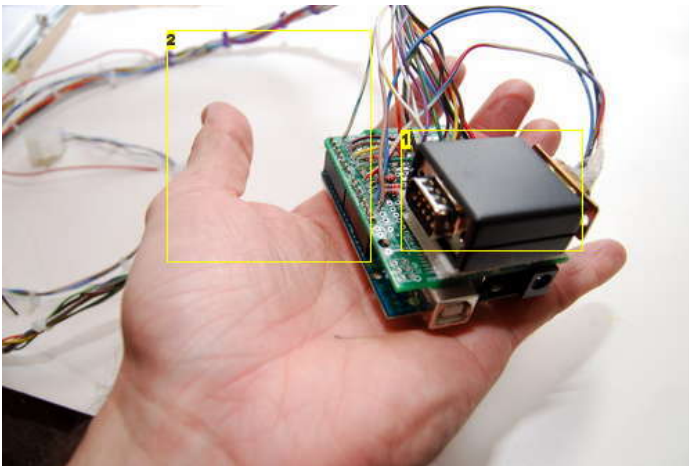


Image Notes

1. X-10 Firecracker which controls the lighting
2. Arduino micro-controller with wired ProtoShield board

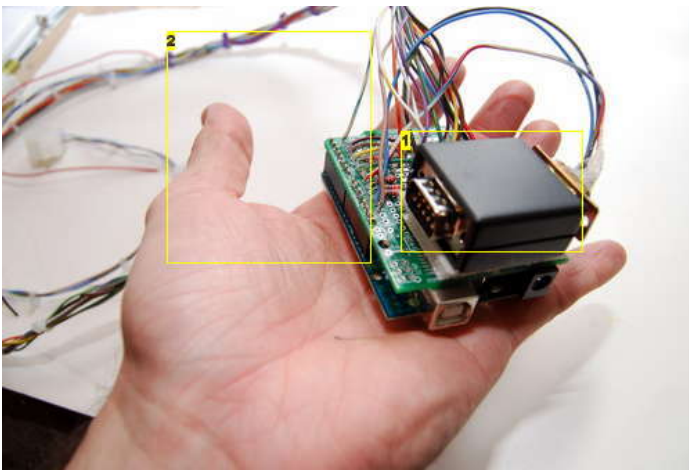


Image Notes

1. Looks like a normal mirror when turned off

step 5: TV and Sound System

The TV is recessed in the wall and attached with a flush LCD mount.

I had a Nuvo Grand Concerto whole house audio system already in the main house and had an extra zone so I just needed to run speaker and Cat 5 to wire the Playhouse for sound. The Nuvo Grand Conerto is very nice, they run \$3,500 & up retail but you can pick one up off eBay for \$2K.

I picked up the in-wall ceiling speakers from www.hometech.com that weren't too expensive (\$80) and sound pretty good. The speaker grills are paintable to blend in with the ceiling.

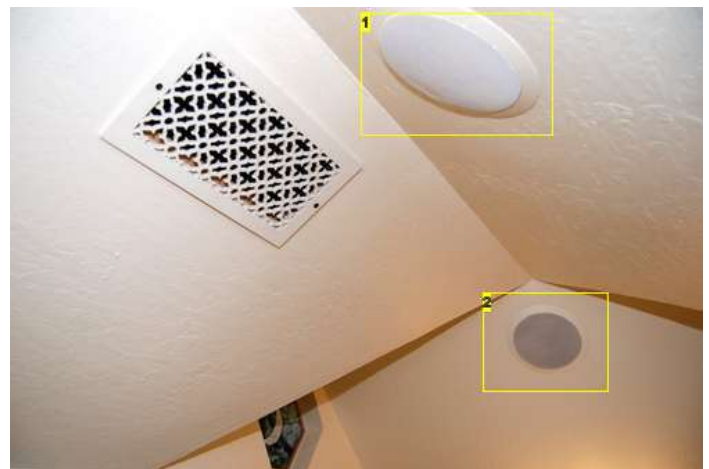


Image Notes

1. Speaker
2. Speaker

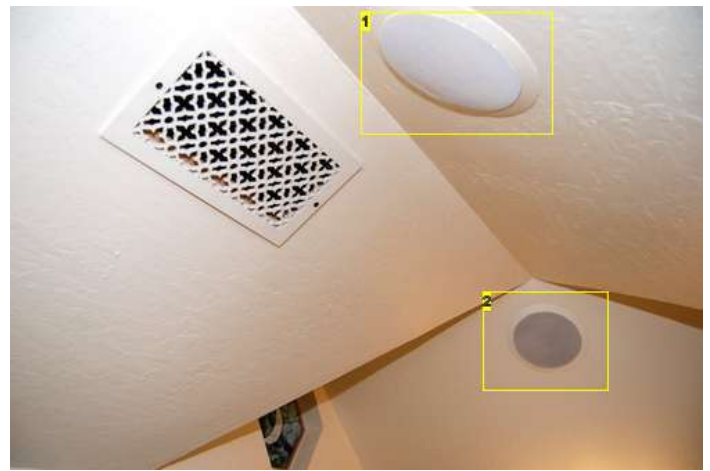


Image Notes

1. Nuvo Grand Concerto Keypad controls the audio, hooked up to networked iPod

step 6: Insulation and Drywall

Since the walls are only 3.5" deep, I did some research to find the most efficient insulation by thickness which turned out to be the rigid foam type from R-Max. The thickest one I could find at Home Depot was 2". Its not cheap as far as insulation goes and runs \$20 per 4x8 panel. It's very easy to work with though, just cut it to size and screw it in. Make sure to use a washer on top of the screw for more holding area.

The drywall was the one thing I had someone else do which I'm glad I did. I found a local guy who did it for \$300.



Image Notes

1. My Dad made the stained glass windows, each of them needed to be framed before the drywall
2. Screw with washer for more holding area



Image Notes

1. Ceiling speaker opening

step 7: Lighting, Windows, and Door

My wife is quite good at finding vintage light fixtures on eBay. She then takes them to a local lighting guy in town who re-wires them.

Sylvania now makes a dimmable compact fluorescent bulb which you can see in the pictures, they work great.

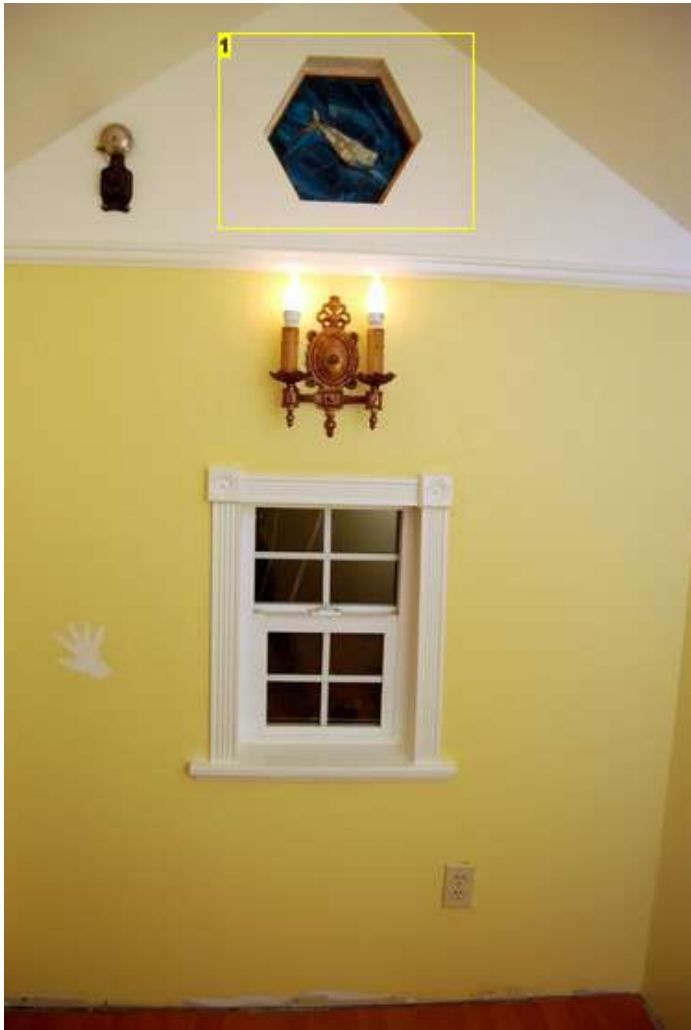


Image Notes

1. Custom stained glass windows my Dad made

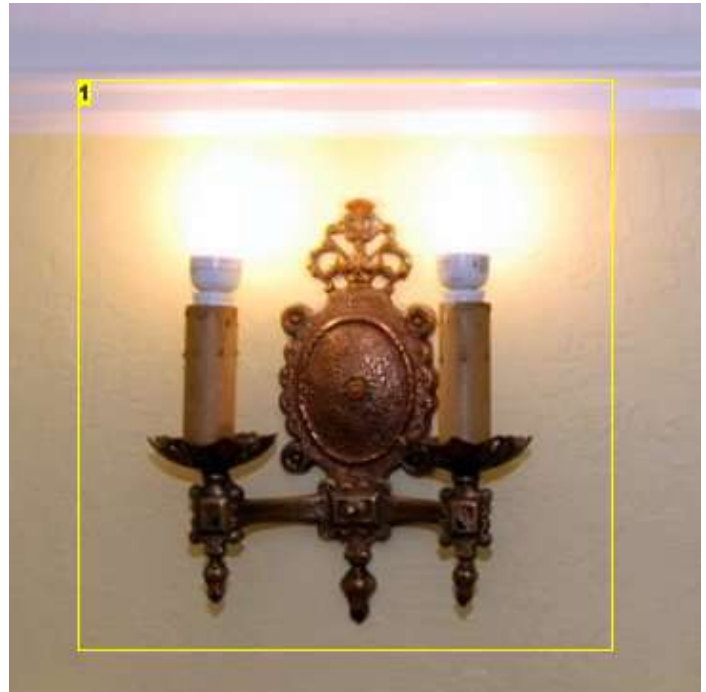


Image Notes

1. One of two vintage sconces



Image Notes
1. Dimmable CFL



Image Notes
1. Vintage Porch Light



Image Notes
1. Before trim



Image Notes
1. Re-purposed baseboard from our main house



Image Notes
1. Vintage doorbell off eBay

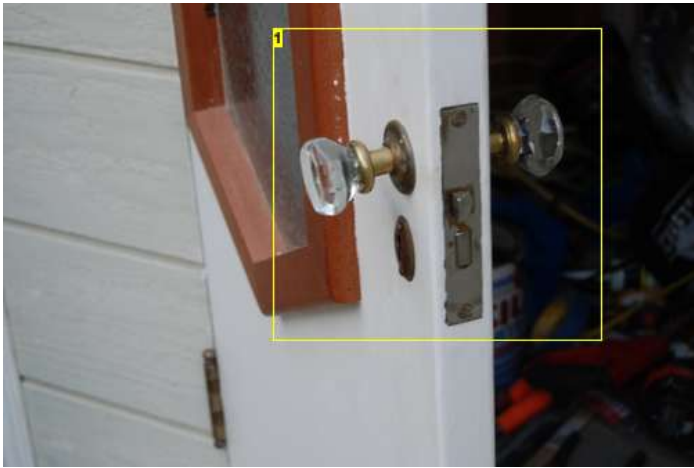


Image Notes
1. Vintage door hardware and working mortise lock



step 8: Floor, Picture Rail Molding, and Baseboard

I installed laminate flooring. There are plenty of good tutorials out there for installing laminate. Do be sure to leave a 1/4" at the edges to allow for expansion.

Picture rail molding has a small gap behind it that lets you hang a hook and picture frame. You can't really see it in the photos but using a high sheen oil based paint makes the molding really pop in contrast to the flat water based paint on the walls.

Be sure also to sand the baseboard & give the top a nice rounded edge.

One big lesson learned on molding & baseboard : Spend the \$10 on an **angle finder tool** angle finder tool. I didn't figure this out until the last few cuts unfortunately. Many corners aren't exactly 90 degrees so this will allow you to cut the exact angles needed with your miter saw.



Image Notes

1. Poplar wood baseboard
2. Picture rail molding



Image Notes

1. Laminate flooring underlayment, duck tape pieces together





Image Notes

1. 1/4" spacers, Home Depot has them

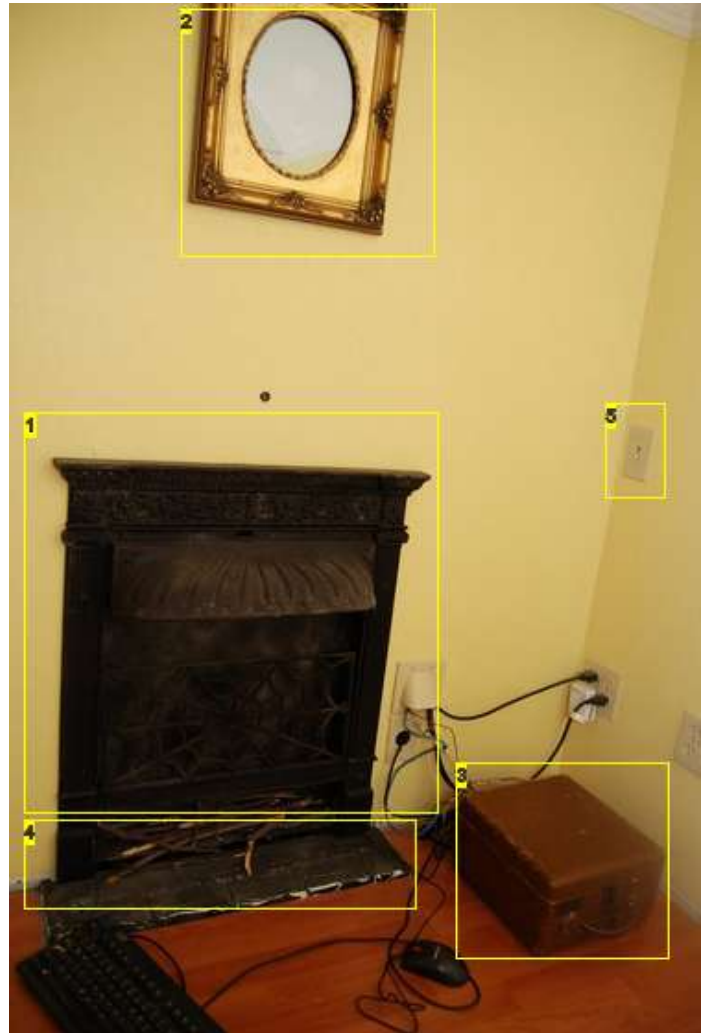


Image Notes

1. Fake fireplace
2. Interactive magic mirror, there's a separate Instructable on this one at http://www.instructables.com/id/The_Magic_Mirror/
3. PC
4. Fake bricks made from a wood board with drywall joint compound and then spray painted
5. Turns on the fireplace (Red LEDs)

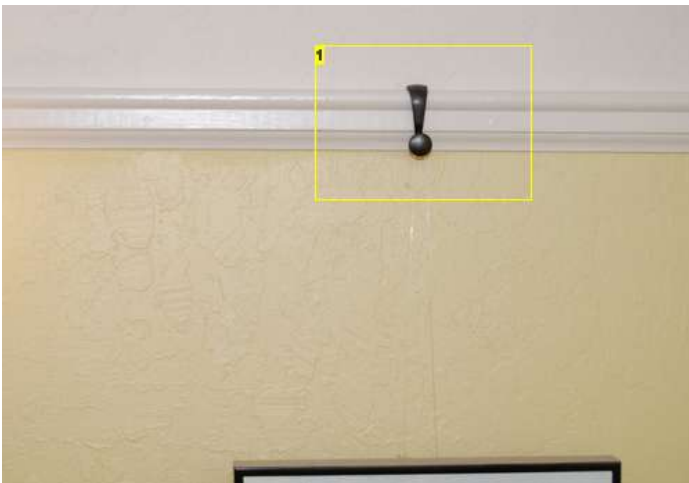


Image Notes

1. Picture rail molding

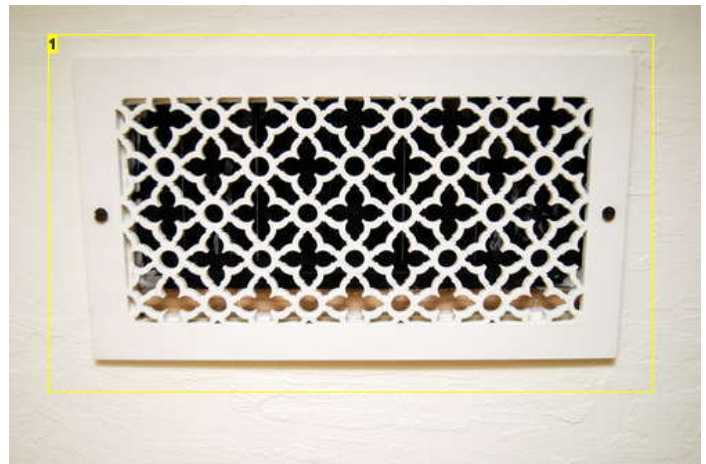


Image Notes

1. Roof Vent Grate



Image Notes

1. Poplar wood baseboard

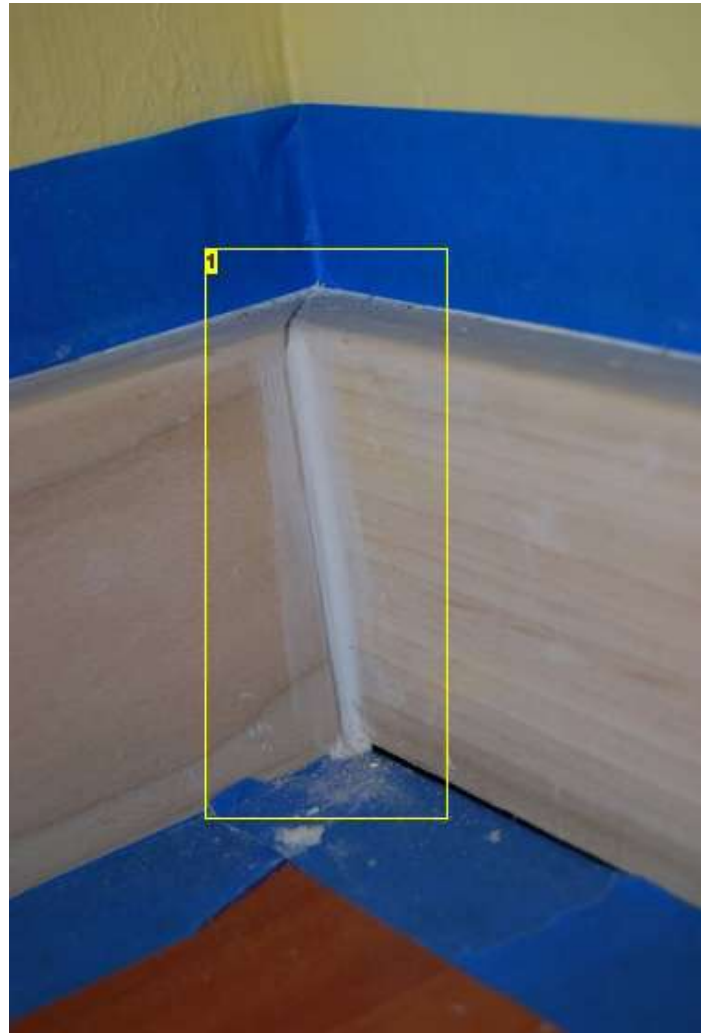


Image Notes

1. Didn't use the angle finder tool, hence the big gap covered with painters caulk.

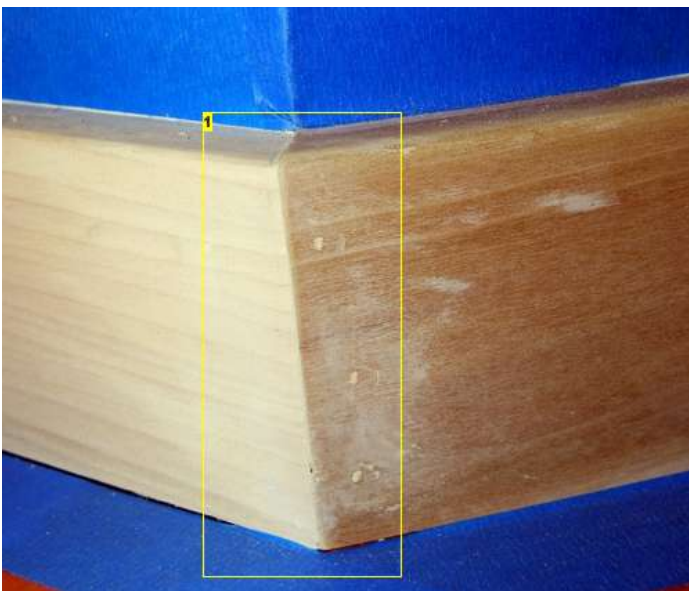


Image Notes

1. Used the angle finder tool on this one

step 9: Built-in Bookshelf

The built in bookshelf has bead board on the back and sides. The shelves are stained & lacquered Redwood which are glued on the shelves notches with Liquid Nails construction adhesive.



Image Notes

1. The Yard, my next Project



Image Notes

1. Bookshelf Opening



Image Notes

1. Bead Board Paneling
2. Redwood shelves, stained and lacquered



Related Instructables



DIY Indoor Playhouse by creatrope



Build a log cabin Playhouse for under \$300 by MikeO



A "Jungle Cruise" Playhouse *updated (slideshow) by madhatter1138



DIY Magic Mirror - Arduino Powered (Updated 11/09) by alinke



Home Projects (guide) by fungus amungus



Craftsman Workshop of the Future Contest Winners (guide) by Contest Robot




Craftsman Workshop of the Future Contest Round 3 Finalists (guide) by Contest Robot




How to Build a Cardboard Castle by Mr. McGroovy


Comments

37 comments [Add Comment](#)

 **alinke** says: Nov 13, 2009. 3:33 PM [REPLY](#)
yes, if I re-call, I used 3 inch deck screws, the ones with the coating on them so they go in nice and easy, also had the star heads as opposed to the traditional philips


 **Coleman1977** says: Nov 13, 2009. 10:56 AM [REPLY](#)
Are the walls secured to the wooden base of the concrete pad?


 **dianakcollins** says: Sep 5, 2009. 8:26 AM [REPLY](#)
I would like to do something like this. What should my estimated budget be?

 **alinke** says: Sep 5, 2009. 1:31 PM [REPLY](#)
I didn't track the costs but here's a rough breakdown:
8x8 concrete slab - \$200
wood and internal trim - \$200
electrical wiring and panel - \$100
speaker wire and in wall speakers - \$100
roof shingles and flashing - \$150
drywall - I paid someone to hang and mud the drywall \$400
tv mount and tv - \$150
vintage light sconces- \$80
foam panel insulation - \$80
pergo floor - \$120
custom sized windows - \$200
see <http://diymagicmirror.com> for parts and costs for the magic mirror


Hope that helps


 **Allowance10** says: Aug 26, 2009. 9:56 PM [REPLY](#)
when can I move In? LOL

 **azntrooper93** says: Jul 31, 2009. 10:38 PM [REPLY](#)
shes getting tall should ahve made it a lil bigger then when they grow to old u can hide in it

 **atombomb1945** says: Jan 5, 2009. 8:59 AM [REPLY](#)
Awesome design. You will be lucky to get the kids out of there for anything.

Or, was that the idea in the first place?


 **azntrooper93** says: Jul 31, 2009. 10:37 PM [REPLY](#)
how rich are U LOL magic mirror LOL if u actually made that and u are loaded

 **Crucio** says: Jul 6, 2009. 3:12 AM [REPLY](#)
Fantastic project. It's great that your dad was so involved.

I particularly like the stained glass he made--an instructable coming for that? Please? ;)

 **GymMama** says: May 27, 2009. 6:00 AM [REPLY](#)
I think the inside is nicer than my own house! Great job!


 **horsefreakella** says: May 27, 2009. 5:30 AM [REPLY](#)
AMAZING MAN! love it :)

 **prolixia** says: Jan 8, 2009. 1:59 AM [REPLY](#)
i don't know -- it's gorgeous, but isn't it a little.... much? i think of a playhouse as a place for filling in the gaps with imagination, not the consumption of all mod cons. it is lovely, but it seems to set the bar for "gimmee" awfully high.

 **horsefreakella** says: May 27, 2009. 5:30 AM [REPLY](#)
Ahh shut up! ITS awesome :)


 **Rock Soldier** says: May 22, 2009. 2:39 PM [REPLY](#)
You must really love your children.
Can you make me one? But bigger, and more manly?

 **hcold** says: May 2, 2009. 9:57 PM [REPLY](#)
Ugh.

 **aeray** says: Apr 28, 2009. 9:31 PM [REPLY](#)
Impressive project.
About the baseboard: never try to miter an inside corner. Always butt or cope an inside joint.


 **christyw** says: Apr 16, 2009. 5:50 PM [REPLY](#)
This is awesome.
When I was a kid, I always wanted a house like this! great work!!!!


 **saarenbobaaren** says: Mar 16, 2009. 11:20 PM [REPLY](#)
this is incredible!! very well done :)


 **CherreAnn** says: Feb 20, 2009. 6:51 AM [REPLY](#)
Absolutely Gorgeous!!! I want to have kids just so I can build it! =D Or maybe I will just build it for me!!! ; D
Thanks for the step by step info on it! AWESOME! :D


 **cutekitten** says: Feb 12, 2009. 12:42 PM [REPLY](#)
omg that is to awesome i want one myself


 **amando96** says: Feb 9, 2009. 11:21 AM [REPLY](#)
thats better than my house... lol
i should make one of these for my Lab/bike-mechanicisms... would be cool

 **mariaclemente2000** says: Feb 7, 2009. 8:04 AM [REPLY](#)
The house is beautiful. I was wondering, why not send it to HGTV to have it featured on television.

 **kccismee** says: Feb 3, 2009. 1:15 AM [REPLY](#)
Oh my - it's amazing! The best part is that they can use it for a very long time later it will be a great girls "hang-out" even sleep overs! Not like the crappy plastic things that might hold their attention for 1 summer.
Is it heated? Oh how I wish my hubby were handy! It looks like it could be a nice hide-away for Mommy too -

 **kriskross** says: Jan 30, 2009. 6:01 PM [REPLY](#)
yo, this crib is tricked out!!! love it. those are some very lucky girls to have such a cool dad!

 **redrev** says: Jan 22, 2009. 11:11 AM [REPLY](#)
Dude, you are one cool dad..lol, now I have to go and make one for my grand daughters..
Cheers

 **uber dum05** says: Jan 21, 2009. 11:09 AM [REPLY](#)
Make it into your workshop and add a second floor for your kids.....lol



How2BRandy says:

Jan 19, 2009. 3:09 PM [REPLY](#)

Its wonderful and beautiful. Hopefully it will be a keepsake so when your daughters grow up, they can pass it along to their children :)

Wait... no potty room???



porcupinemamma says:

Jan 8, 2009. 4:01 PM [REPLY](#)

This is sooo wonderful! You have built something that will create life -time memories for your girls... just incase, get the mirror to mention princes too ;0)



alinke says:

Jan 14, 2009. 4:37 PM [REPLY](#)

thanks, it has a pirate mode also



HamatoKameko says:

Jan 13, 2009. 3:09 AM [REPLY](#)

This is absolutely fantastic.

I want one. XD



sssqueeze says:

Jan 9, 2009. 6:58 PM [REPLY](#)

Hey!

Man this is great! When can I move in? Love the stained glass. The Whale reminds me of...home. May your good work bring you good luck.



alinke says:

Jan 10, 2009. 12:23 AM [REPLY](#)

thanks for the kind words



erinkwhite says:

Jan 6, 2009. 6:20 PM [REPLY](#)

Super cute! Love the decorations. They must have taken a long time to find.



staceyl says:

Jan 7, 2009. 10:48 AM [REPLY](#)

I have a feeling there was a master eBay user at work!



ricknsmoe says:

Jan 6, 2009. 8:15 PM [REPLY](#)

My wife sez I need to build this for my granddaughter who is 3, but will be almost 4 if it takes me that long. Too cute! Rick n Cheryl



alinke says:

Jan 7, 2009. 1:39 AM [REPLY](#)

hopefully you could do it faster :-)) it was kind of hard telling the kids too wait so long. Let me know if you take it on and I'll pass on any tips I can



j_larson says:

Jan 5, 2009. 10:31 AM [REPLY](#)

I love it! Gorgeous!